

Amendments to the Claims

Please renumber the final three claims in the application. The final three claims in the application, which appear of page 55, should be assigned claim numbers 146, 147 and 148, respectively. The renumbering of the aforementioned claims is made to correct typographical errors and does make any substantive change to claimed subject matter.

Please cancel claims 1-25, 49-70, and 94-148 without prejudice.

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of the Claims:

1 – 25 (Cancelled)

26. (Original): A system, comprising:

a gun comprising a gun barrel;

a gun pointing system, wherein the gun pointing system is configured to point the gun toward a target; and

a laser weapon disposed within the gun barrel, wherein the laser weapon comprises a laser weapon cartridge and at least one antenna.

27. (Original): The system of claim 26, further comprising a loading system coupled to the gun, wherein the laser weapon cartridge is configured to be loaded into the gun barrel via the loading system.

28. (Original): The system of claim 26, further comprising a spent shell ejection system, wherein the laser weapon cartridge is configured to be removed from the gun barrel via the spent shell ejection system.

29. (Original): The system of claim 26, wherein the gun pointing system is further configured to track the target over a period of time.

30. (Original): The system of claim 26, further comprising at least one radar system, wherein at least one of the radar systems is configurable to assess a position of the target.

31. (Currently amended): The system of claim 26, further comprising at least one radar system, wherein at least one of the radar systems is ~~configurable~~configurable to transmit at least one radar signal, and wherein at least one antenna of the laser weapon is configured to detect the at least one radar signal transmitted by the at least one radar system.

32. (Original): The system of claim 26, wherein the laser weapon comprises a high-energy laser.

33. (Original): The system of claim 32, wherein the laser weapon comprises sufficient reactants to fire the laser at least one time.

34. (Original): The system of claim 26, wherein the laser weapon further comprises at least one processor, wherein at least one of the processors is configurable to initiate firing of the laser weapon.

35. (Original): The system of claim 26, wherein the laser weapon further comprises at least one processor, wherein at least one of the processors is configurable to assess a relative position of

the target based on data gathered by the at least one antenna and to initiate firing of the laser weapon.

36. (Original): The system of claim 26, wherein the laser weapon is configured to operatively engage a firing device of the gun to couple with an external component of a fire control system.

37. (Original): The system of claim 26, wherein the laser weapon is configured to be armed by a firing device of the gun.

38. (Original): The system of claim 26, wherein the laser weapon further comprises at least one processor, wherein at least one of the processors is configurable to estimate at least one target location where the laser weapon has a relatively high probability of damaging the target.

39. (Original): The system of claim 26, wherein the laser weapon further comprises at least one processor, wherein at least one of the processors is configurable to estimate at least one target location where the laser has a relatively high probability of damaging the target and wherein at least one of the processors is configurable to inhibit firing the laser weapon when the target is at a location where the laser weapon has a relatively lower probability of damaging the target.

40. (Original): The system of claim 26, wherein pointing the gun toward the target comprises pointing the gun such that the at least one antenna has a substantially direct line of sight to the target.

41. (Original): The system of claim 26, wherein the laser weapon further comprises at least one processor, wherein at least one of the processors is configurable to assess a relative position of the target based on data gathered by the at least one antenna and to initiate firing of the laser weapon, wherein determining relative position of the target comprises determining at least two

potential positions of the target and determining a relative position of the target based on the at least two potential positions.

42. (Original): The system of claim 26, wherein the gun barrel shields the at least one antenna from at least a portion of electromagnetic energy proximate the gun barrel.

43. (Original): The system of claim 26, wherein the gun barrel shields the at least one antenna from at least a portion of electromagnetic energy traveling along a path that does not correspond to a direct line of sight to the at least one antenna.

44. (Original): The system of claim 26, wherein the laser weapon further comprises at least one processor in communication with the at least one antenna, wherein at least one signal received by the at least one antenna is usable by at least one processor to assess a relative position of the target with respect to the optical axis.

45. (Original): The system of claim 26, wherein the laser weapon further comprises a programmable processor, wherein the programmable processor is at least configurable to receive program instructions, and wherein the program instructions configure the programmable processor to initiate firing of the laser weapon based on programmed conditions and data received from the at least one antenna.

46. (Original): The system of claim 26, wherein the gun barrel comprises rifling.

47. (Original): The system of claim 26, wherein the gun barrel is substantially smooth.

48. (Original): The system of claim 26, wherein the gun barrel has a diameter of approximately five inches.

49 - 70 (Cancelled)

71. (Original): A system comprising:

a hollow elongated member;

at least one sensor which may be disposed within the hollow elongated member, wherein at least one of the sensors is configured to gather data corresponding to a position of a target; and

a laser weapon cartridge disposed within the hollow elongated member and in communication with at least one of the sensors; wherein the laser weapon cartridge is configured to fire automatically in response to data gathered by at least one of the sensors.

72. (Original): The system of claim 71, wherein an inner surface of the hollow elongated member is substantially smooth.

73. (Original): The system of claim 71, wherein an inner surface of the hollow elongated member comprises a plurality of projections.

74. (Original): The system of claim 71, wherein the hollow elongated member comprises a substantially circular cross section.

75. (Original): The system of claim 71, wherein the hollow elongated member comprises a noncircular cross section.

76. (Original): The system of claim 71, further comprising at least one radar system in communication with at least one aiming system, wherein at least one of the radar systems is

configured to receive at least one radar signal corresponding to the position of the target and to send the data related to the position of the target to the aiming system; and wherein at least one of the sensors disposed within the hollow elongated member is configured to detect at least one radar signal corresponding to the position of the target to assess when the target is substantially aligned with a firing path of a laser optical axis.

77. (Original): The system of claim 71, wherein the laser weapon cartridge comprises a processor, wherein the processor is configured to receive data from at least one of the sensors disposed within the hollow elongated member to assess the position of the target relative to a laser optical axis.

78. (Original): The system of claim 71, wherein at least one sensor is configured to detect radar signals corresponding to a position of the target to assess when the target is substantially aligned with a firing path of the laser optical axis.

79. (Original): The system of claim 71, wherein the laser weapon cartridge comprises a processor, wherein the processor is configured to receive data from at least one of the sensors to assess the position of the target relative to a laser optical axis.

80. (Original): The system of claim 71, wherein the laser weapon cartridge comprises a processor, wherein the processor is configured to receive data from at least one of the sensors to assess the position of the target relative to the laser optical axis, and wherein the processor is further configurable to initiate firing of the laser weapon cartridge if the position of the target is substantially aligned with a firing path of the laser optical axis.

81. (Original): The system of claim 71, wherein the laser weapon cartridge comprises a programmable processor, wherein the programmable processor is configured to receive program

instructions, and wherein the program instructions configure the programmable processor to initiate firing the laser weapon cartridge based on programmed conditions and data received from at least one of the sensors.

82. (Original): The system of claim 71, wherein the laser weapon cartridge comprises a processor, wherein the processor is configured to initiate firing of the laser weapon cartridge based on data received from at least one of the sensors.

83. (Original): The system of claim 71, further comprising an aiming system configured to track the target over a period of time.

84. (Original): The system of claim 71, wherein the laser weapon cartridge is configured to be removed from the hollow elongated member after firing.

85. (Original): The system of claim 71, further comprising at least one processor, wherein at least one of the processors performs an arming process to initiate gathering of position data by at least one of the sensors.

86. (Original): The system of claim 71, further comprising at least one processor, wherein at least one of the processors performs an arming process to initiate the laser weapon cartridge to begin searching for an opportunity to automatically fire.

87. (Original): The system of claim 71, wherein the laser weapon cartridge comprises a high-energy laser.

88. (Original): The system of claim 71, wherein the laser weapon cartridge comprises at least one processor, wherein at least one of the processors is configured to assess at least one target location where a laser beam has a relatively high probability of damaging the target.

89. (Original): The system of claim 71, wherein the laser weapon cartridge comprises at least one processor, wherein at least one of the processors is configured to assess one or more target locations where a laser beam has a relatively high probability of damaging the target, and wherein at least one of the processors is further configured to inhibit firing of the laser weapon cartridge when the target is at a location where a laser beam has a relatively lower probability of damaging the target.

90. (Original): The system of claim 71, further comprising an arming system, wherein the arming system aims the hollow elongated member in a desired direction comprises aiming the hollow elongated member toward the target such that at least one sensor has a substantially direct line of sight to the target.

91. (Original): The system of claim 71, wherein the hollow elongated member is configured to shield at least one of the sensors from at least a portion of electromagnetic energy proximate the hollow elongated member.

92. (Original): The system of claim 71, further comprising at least one processor in communication with at least one of the sensors, wherein signals received by at least one of the sensors are usable by at least one of the processors to assess relative position of the target with respect to an optical axis.

93. (Original): The system of claim 71, further comprising at least one processor in communication with at least one of the sensors, wherein at least one signal received by at least

one of the sensors is usable by at least one of the processors to assess relative direction of the target.

94 – 148 (Cancelled).